

IN THE SPECIFICATION:

Please amend the specification as follows:

Please amend the paragraph beginning at page 16, line 10, and ending on page 17, line 6, as follows:

A photoresist is coated on the substrate 201 as shown in FIG. 5 to form a first resist pattern 601. FIG. 6 shows an illustrative drawing after the above step. The quartz substrate 201 is subsequently etched to a depth of 2440 Å using the resist pattern 601 as a mask, followed by peeling 15 the resist pattern 601. Then, the photoresist is coated on the substrate 201 to form a second resist pattern 701. FIG. 7 shows an illustrative drawing after the above step. Subsequently, the quartz substrate 201 is subsequently etched to a depth of 1220 Å using the resist pattern 701 as a mask. FIG. 8 shows an illustrative drawing after the above step. Finally, the photoresist pattern 701 is peeled to manufacture the diffractive optical element having the light-shielding member as shown in FIG. 9 on the diffraction face. The remaining work is only to insert the ~~refractive~~ diffractive optical element 1 into the barrel 102 and the like as shown in FIG. 1. When a highly precise centering between the barrel 102 and ~~refractive~~ diffractive optical element 1 is required, centering between the barrel 102 and ~~refractive~~ diffractive optical element 1 is simplified by taking advantage of the alignment 5 mark 301 used in the process for mounting in the lens barrel 102.

Please amend the paragraph beginning at page 19, line 9, and ending on page 19, line 16, as follows:

The remaining manufacturing step is merely to insert the refractive optical element 1 into the barrel 102 and the like as shown in Fig. 1. When a highly precise centering between the barrel 102 and ~~refractive~~ diffractive optical element 1 is required, centering between the barrel 102 and the ~~refractive~~ diffractive optical element 1 is simplified by taking advantage of the alignment mark 301 used in the process for mounting the lens barrel 102.

Please amend the paragraph beginning at page 20, line 24, and ending on page 21, line 6, as follows:

The remaining manufacturing step is merely to mount the ~~refractive~~ diffractive optical element 1 in the barrel 1702 and the like as shown in FIG. 17. When a highly precise centering between the barrel and ~~refractive~~ diffractive optical element is required, centering between the barrel and ~~refractive~~ diffractive optical element is simplified by taking advantage of the alignment mark used in the process for mounting in the barrel.

Please amend the paragraph beginning at page 22, line 17, and ending on page 22, line 24, as follows:

The remaining manufacturing step is merely to insert the refractive optical element 1 in the barrel 1802 and the like as shown in FIG. 18. When a highly precise centering between the lens barrel 1802 and ~~refractive~~ diffractive optical element 1 is

required, centering between the lens barrel and ~~refractive~~ diffractive optical element is simplified by taking advantage of the alignment mark used in the process for mounting the lens barrel.

Please amend the paragraph beginning at page 29, line 24, and ending on page 30, line 24, as follows:

In Fig. 21, the reference numeral 2101 denotes an illumination optical system including a light source, the reference numeral 2102 denotes a reticle, the reference numeral 2103 denotes a barrel of a projection optical system 2108, the reference-numeral 2104 denote a lens, the reference numeral 2105 denotes a diffractive optical element, the reference numeral 2106 denotes a wafer and the reference numeral 2107 denotes a wafer stage. The ~~refractive~~ diffractive optical element 2105 can be applied to any of the foregoing embodiments, in which, for example, a light-shielding means may be provided at the periphery of the diffraction face of the diffractive optical element according to the first embodiment. The wafer 2106 is positioned at a desired location with the wafer stage 2107, and the height of the wafer is adjusted to the focus position with a focus detecting mechanism (not shown}. The reticle is aligned, if necessary, against the mark on the lower layer of the wafer that has been exposed using a detection system (not shown). When focusing and alignment have been completed, the shutter (not shown} is opened to illuminate the reticle with the illumination light form the light source 2101, and the pattern on the reticle 2102 is projected on the wafer 2106 with the projection optical system 2108. A KrF excimer laser or a ArF excimer laser is used for the light source described above, emitting a UV light with a wavelength of 250 nm or less.

Please amend the paragraph beginning at page 30, line 25, and ending on page 31, line 4, as follows:

The device is manufactured through a development step of the wafer 2106 known in the art. The optical barrel having the ~~refractive~~ diffractive optical element according to the present invention can be also applied to an image-forming optical instrument or an illumination apparatus as well.